



The Air National Guard's
Commitment to the
*Air Installation
Compatible Use Zone
Program*



INTRODUCTION

We, the men and women of the Air National Guard, dedicate ourselves to being good neighbors and active community members.

To show this commitment, the Air National Guard actively studies the areas around our bases to identify potential accident zones and assist communities in planning land use. Homes under our takeoff and landing paths or schools in potential accident areas are examples of development better placed away from our bases.

If the Air National Guard finds that residents or visitors in the neighborhood are interrupted by base operations, we try to adjust our way of doing business. For example, we may be able to alter takeoff and landing routes. We will also recommend ways in which the neighboring land may be better used.

This commitment to the community is conducted as part of the U.S. Air Force's Air Installation Compatible Use Zone (AICUZ) program.



182nd Airlift Wing, Illinois Air National Guard – Peoria, Illinois

THE PURPOSE OF THIS PROGRAM

Military airfields often attract development to the immediate surrounding areas. Without suitable land controls, homes could be built close to our runways; buildings and other structures may be built too high; or schools could be built in areas subject to potential aircraft mishaps. Land closest to the airfield is also subject to high noise levels.

The Air Installation Compatible Use Zone program helps communities plan property development around our bases. The program recommends solutions for the effects of noise levels and our operations on the surrounding communities.

The purpose of these recommendations is to:

- Keep noise-sensitive uses such as homes, hospitals and schools out of the high noise zones;

- Keep high concentrations of people outside the accident potential zones; and
- Prevent land uses that would interfere with the navigation of aircraft, such as tall buildings, smoke stacks or radio transmitters.

Our Message to You

Our Air Installation Compatible Use Zone program:

- Respects people, their comfort, safety and protection.
- Uses state-of-the-art technology to assist those planning the future of their communities.
- Encourages community leaders to use the study results as an aid in future land planning.

RESPECTING PEOPLE

The Air Installation Compatible Use Zone program respects people, their comfort, safety and protection.

Our Air Installation Compatible Use Zone program studies the effects of noise, aircraft accident potential and land development on the present and future neighbors of our bases. This program seeks community cooperation and understanding. By conducting this program, we search for reasonable solutions to ensure the community and the base remain good neighbors.

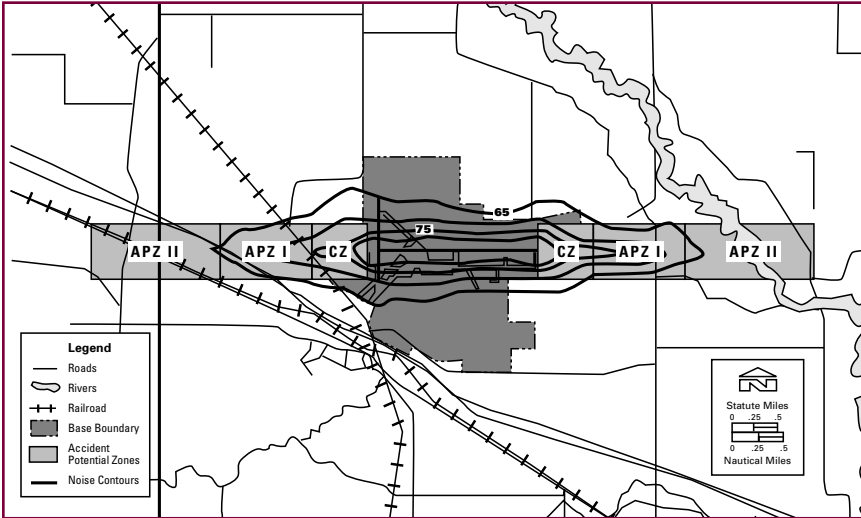
The Air Installation Compatible Use Zone program identifies community impacts caused by noise from flight operations. This study looks at how land adjoining the base is used, today and in the future. For example, a subdivision built next to the base may be directly under the flight path used for training missions. Noise

from takeoffs and landings may affect those people living in the subdivision. The study provides detailed information about where noise levels are highest.

The Air Installation Compatible Use Zone study recommends uses for land around the base. The study describes the direction and height of flights, accident potential and structure and other obstruction heights. The study's maps identify areas in which accident potential is greatest. The land planning recommendations protect the safety and welfare of the public while allowing us to continue our mission.

The program identifies areas beyond runways according to the potential for aircraft accidents. The size and shape of these zones are based on an historical analysis of military aircraft accidents.

Noise Zones/Accident Potential Zones



- The Clear Zone, the area closest to the runway end, is the most unsafe. Analysis shows that most accidents occur along the runway centerline within 3,000 feet of the runway end. About 28 percent of aircraft accidents occur in this area. Usually, the Air National Guard will purchase privately owned lands within the Clear Zone. This purchase helps to ensure safety for people and property in those areas.
- Accident Potential Zone I is the next block of land beyond the Clear Zone. The accident risk in this zone is much lower than in the Clear Zone. About 10 percent of

accidents occur in this zone.

The Air National Guard believes, however, that to protect the public, the area must be identified to the local community. This information can be used to help guide future land use.

- Accident Potential Zone II extends from Accident Potential Zone I. Accident data show that approximately 6 percent of all aircraft accidents occur in Accident Potential Zone II.

To protect the public, land use planning and control is strongly encouraged in Accident Potential Zones I and II.

USING STATE-OF-THE-ART TECHNOLOGY

The Air Installation Compatible Use Zone program uses state-of-the-art technology to assist those planning the future of their communities.

Noise maps provide the neighboring communities information to use while planning for land development. Noise from flying operations is affected by several items:

- The type of aircraft used,
- Where and how high they fly,
- How often they fly over a given area and
- The time of day they operate.

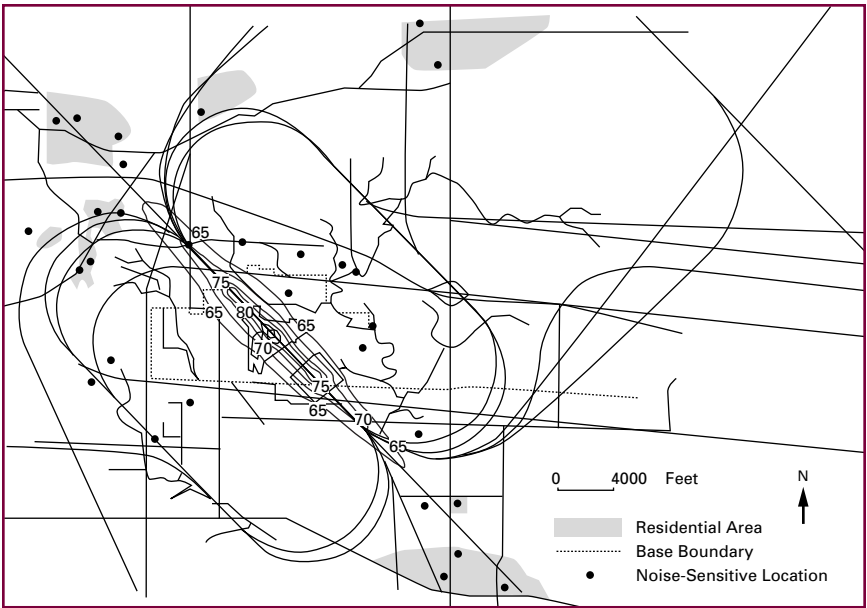
Noise maps show the community noise exposure levels along the flight

paths. These maps have noise contour lines that represent noise levels of typical flight activity. These levels are shown in decibels determined from 24-hour averages of the noise impact around the base.

Over the years several methods have been used to describe noise impacts. Since 1974, the U.S. Air Force has used the 24-hour Day-Night Average Sound Level measurement system. This method was adopted from the U.S. Environmental Protection Agency.


When describing noise levels, we consider the time of day an aircraft

Base Map With Flight Tracks and Noise Contours



Sound Levels in Decibels (dB) and Relative Loudness of Typical Noise Sources in Outdoor and Indoor Environments

dB(A)	Overall Level	Community Noise Level (Outdoor)	Home and Industry Noise Level (Indoor)	Subjective Loudness (Relative to 70 dB)
120	Uncomfortably loud	Military jet aircraft take-off with afterburner from aircraft carrier at 50 ft (130)	Oxygen torch (121)	32 times as loud
110		Turbo-fan aircraft at take-off power at 200 ft (118)	Riveting machine (110), Rock band (106–114)	16 times as loud
100	Very Loud	Jet flyover at 1,000 ft (103), Boeing 707 DC-8 at 6,080 ft before landing (106), Bell J-2A helicopter at 100 ft (100)		8 times as loud
90		Power mower (96), Boeing 707 DC-9 at 6,080 ft before landing (97), Motorcycle at 25 ft (90)	Newspaper press (97)	4 times as loud
80		Car wash at 20 ft (89), Prop plane flyover at 1,000 ft (88), Diesel truck 40 mph at 50 ft, Diesel train 45 mph at 100 ft (83)	Food blender (88), Milling machine (85), Garbage disposal (80)	2 times as loud
70	Moderately loud	High urban ambient sound (80), Passenger car 65 mph at 25 ft (77), Freeway at 50 ft from pavement edge 10 a.m. (76)	Living room music (76), TV-audio, vacuum cleaner (70)	70 dB(A)
60		Air conditioning unit at 100 ft (60), Electric typewriter at 10 ft (64), Dishwasher (rinse) at 10 ft (60), Conversation (60)	Cash register at 10 ft (65-70)	1/2 as loud
50	Quiet	Large transformers at 100 ft (50)		1/4 as loud
40		Bird calls (44), Lowest limit of urban ambient sound (40)		
dB Scale Interrupted				
10	Just audible			
0	Threshold of hearing			



flies over a given area and the number of aircraft passing over each area. We know that noise occurring at night is more irritating than the same noise occurring during the day. Also, noise repeated 50 times a day is more disturbing than the same noise heard only once. Besides aircraft flight operations, the Day-Night Average Sound Level system also includes noise from engine/aircraft maintenance checks on the ground. Data are collected for each ground engine runup or test. This additional noise is added to the flying noise to produce contours reflecting the overall noise environment.

Land use guidelines are provided to the community based on the compatibility of various types of land

development with these noise exposure levels. These guidelines are published by the Federal Interagency Committee on Urban Noise in their June 1980 publication, *Guidelines for Considering Noise in Land Use Planning and Control*. In addition, the U.S. Department of Transportation, Federal Highway Administration publication, Standard Land Use Coding Manual, identifies and codes land use activities.

The Land Use Compatibility Chart provides a quick reference for planning land use for the various noise and accident potential areas around the field. For community planning purposes, we make recommendations for land development in the areas that record 65, 70, 75 and 80 decibels.

Selected Item from the Air National Guard AICUZ Land Use Compatibility Report Table

SLUCM No.	Land Use Name	Accident Potential Zones			Noise Zones (decibels)			
		Clear Zone	APZ I	APZ II	65 – 69	70 – 74	75 – 79	80 +
10	Residential							
11	Household units							
11.11	Single units; detached	N	N	Y ¹	A ¹¹	B ¹¹	N	N

Accident Potential Zones

Single, detached household units are not compatible and should be prohibited in the Clear Zone and Accident Potential Zone I. Single, detached household units are compatible with restrictions within Accident Potential Zone II where the suggested density of units per acre is 1 to 2 dwellings.

Noise Zones

Single, detached household units are generally compatible in the 65 to 69 decibel Noise Zones and the 70 to 74 decibel Noise Zones as long as they are designed and built with measures to achieve noise level reduction (soundproofing, for example). However, single, detached household units is discouraged in the 65 to 69 decibel Noise Zone and strongly discouraged in the 70 to 74 decibel Noise Zone. Where the community determines that residential uses must be allowed, measures to achieve outdoor to indoor noise level reduction should be incorporated into building codes and be considered in individual approvals.

Measures to achieve an overall noise level reduction do not necessarily solve noise difficulties and additional evaluation is warranted.

Single, detached household units are not compatible and should be prohibited in the 75 to 79 decibel Noise Zones and the 80 and higher decibel Noise Zones.

Source: Draft Air Force Handbook (AFH) 32-7084 — Attachment 4 – 30 April 1996

(See pages 12 through 17 for the complete Air National Guard AICUZ Land Use Compatibility Table.)

ENCOURAGING COMMUNITY LEADERS

We encourage community leaders to use the study results as an aid in future land use planning.

We exchange information with our neighbors to identify and control noise impacts. Your involvement as a community helps prevent land uses that may be affected by our operations.

Recommendations are also made to regulate construction around the base to prevent obstructions that might affect aircraft operations. Air navigational obstructions are natural objects or manufactured structures that could interfere with aircraft navigational equipment or ground-based radar facilities. These obstructions may also be manufactured objects that extend more than 500 feet above the ground at the site of the structure.

The Air Installation Compatible Use Zone program recommends the restriction or prohibition of the following land uses around the base.

- Releasing substances into the air that impair visibility or interfere with aircraft operation (for example, steam, dust and smoke).

- Producing light that interferes with pilot vision.
- Producing vapors that interfere with aircraft communications systems or navigational equipment.
- Attracting birds or waterfowl because of sanitary landfills, feeding stations or certain vegetation growth.

The community can use the Air Installation Compatible Use Zone report to:

- Provide a guideline for planning,
- Modify or adopt zoning laws to reflect the compatible land uses,
- Regulate the height of structures near flight paths (Federal Aviation Administration Regulation Part 77, Subpart C, regulates structure heights near airports),
- Recommend land use,
- Control new subdivision developments near bases, and
- Change regulations to require noise level reduction methods for buildings in high noise zones.



OUR COMMITMENT TO YOU

We, the men and women of the Air National Guard, dedicate ourselves to:

- Respecting people, their comfort, safety and protection.
- Using state-of-the-art technology to assist those planning the future of their communities.

- Encouraging community leaders to use the study results as an aid in future land planning.

The Air Installation Compatible Use Zone program is an example of our commitment to our neighbors.

FOR MORE INFORMATION

If you would like more information on the Air Installation Compatible Use Zone program, contact:

**Air National Guard Readiness Center
Environmental Planning Branch
3500 Fetchet Avenue
Andrews Air Force Base, Maryland 20762-5157
Telephone: (301) 836-8774
or
National Guard Bureau
Office of Public Affairs
Environmental Programs Branch
4501 Ford Avenue
Suite 450
Alexandria, Virginia 22302-1454
Telephone: (800) 252-8959 or (703) 681-0700**

Air National Guard AICUZ Land Use Compatibility Table

(Source: Draft Air Force Handbook (AFH) 32-7084 — Attachment 4 – 30 April 1996)

SLUCM No.	Land Use	Accident Potential Zones			Noise Zones (decibels)			
	Name	Clear Zone	APZ I	APZ II	65 – 69	70 – 74	75 – 79	80 +
10	Residential							
11	Household units							
11.11	Single units; detached	N	N	Y ¹	A ¹¹	B ¹¹	N	N
11.12	Single units; semidetached	N	N	N	A ¹¹	B ¹¹	N	N
11.13	Single units; attached row	N	N	N	A ¹¹	B ¹¹	N	N
11.21	Two units; side-by-side	N	N	N	A ¹¹	B ¹¹	N	N
11.22	Two units; one above the other	N	N	N	A ¹¹	B ¹¹	N	N
11.31	Apartments; walk up	N	N	N	A ¹¹	B ¹¹	N	N
11.32	Apartments; elevator	N	N	N	A ¹¹	B ¹¹	N	N
12	Group quarters	N	N	N	A ¹¹	B ¹¹	N	N
13	Residential hotels	N	N	N	A ¹¹	B ¹¹	N	N
14	Mobile home parks or courts	N	N	N	N	N	N	N
15	Transient lodgings	N	N	N	A ¹¹	B ¹¹	C ¹¹	N
16	Other residential	N	N	N ¹	A ¹¹	B ¹¹	N	N
20	Manufacturing							
21	Food & kindred products; manufacturing	N	N ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
22	Textile mill products; manufacturing	N	N ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
23	Apparel and other finished products made from fabrics, leather, and similar materials; manufacturing	N	N	N ²	Y	Y ¹²	Y ¹³	Y ¹⁴
24	Lumber and wood products (except furniture); manufacturing	N	Y ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
25	Furniture and fixtures; manufacturing	N	Y ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
26	Paper & allied products; manufacturing	N	Y ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
27	Printing, publishing, and allied industries	N	Y ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴

Air National Guard AICUZ Land Use Compatibility Table (continued)

SLUCM No.	Land Use	Accident Potential Zones			Noise Zones (decibels)			
	Name	Clear Zone	APZ I	APZ II	65 – 69	70 – 74	75 – 79	80 +
28	Chemicals and allied products manufacturing	N	N	N ²	Y	Y ¹²	Y ¹³	Y ¹⁴
29	Petroleum refining and related industries	N	N	N	Y	Y ¹²	Y ¹³	Y ¹⁴
30	Manufacturing							
31	Rubber and misc. plastic products, manufacturing	N	N ²	N ²	Y	Y ¹²	Y ¹³	Y ¹⁴
32	Stone, clay and glass products, manufacturing	N	N ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
33	Primary metal industries	N	N ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
34	Fabricated metal products; manufacturing	N	N ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
35	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks manufacturing	N	N	N ²	Y	A	B	N
39	Miscellaneous manufacturing	N	Y ²	Y ²	Y	Y ¹²	Y ¹³	Y ¹⁴
40	Transportation, communications and utilities							
41	Railroad, rapid rail transit and street railroad transportation	N ³	Y ⁴	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
42	Motor vehicle transportation	N ³	Y	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
43	Aircraft transportation	N ³	Y ⁴	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
44	Marine craft transportation	N ³	Y ⁴	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
45	Highway & street right-of-way	N ³	Y	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
46	Automobile parking	N ³	Y ⁴	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
47	Communication	N ³	Y ⁴	Y	Y	A ¹⁵	B ¹⁵	N
48	Utilities	N ³	Y ⁴	Y	Y	Y	Y ¹²	Y ¹³
49	Other transportation communication and utilities	N ³	Y ⁴	Y	Y	A ¹⁵	B ¹⁵	N

Air National Guard AICUZ Land Use Compatibility Table (continued)

SLUCM No.	Land Use	Accident Potential Zones			Noise Zones (decibels)			
	Name	Clear Zone	APZ I	APZ II	65 – 69	70 – 74	75 – 79	80 +
50	Trade							
51	Wholesale trade	N	Y ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
52	Retail trade—building materials, hardware and farm equipment	N	Y ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
53	Retail trade—general merchandise	N	N ²	Y ²	Y	A	B	N
54	Retail trade—food	N	N ²	Y ²	Y	A	B	N
55	Retail trade—auto-motive, marine craft, aircraft and accessories	N	Y ²	Y ²	Y	A	B	N
56	Retail trade—apparel and accessories	N	N ²	Y ²	Y	A	B	N
57	Retail trade—furniture, home furnishings and equipment	N	N ²	Y ²	Y	A	B	N
58	Retail trade—eating and drinking establishments	N	N	N ²	Y	A	B	N
59	Other retail trade	N	N ²	Y ²	Y	A	B	N
60	Services							
61	Finance, insurance and real estate services	N	N	Y ⁶	Y	A	B	N
62	Personal services	N	N	Y ⁶	Y	A	B	N
62.4	Cemeteries	N	Y ⁷	Y ⁷	Y	Y ¹²	Y ¹³	Y ^{14,21}
63	Business services	N	Y ⁸	Y ⁸	Y	A	B	N
64	Repair services	N	Y ²	Y	Y	Y ¹²	Y ¹³	Y ¹⁴
65	Professional services	N	N	Y ⁶	Y	A	B	N
65.13	Hospitals, nursing homes	N	N	N	A*	B*	N	N
65.19	Other medical facilities	N	N	N	Y	A	B	N
66	Contract construction services	N	Y ⁶	Y	Y	A	B	N
67	Governmental services	N	N	Y ⁶	Y*	A*	B*	N
68	Educational services	N	N	N	A*	B*	N	N
69	Miscellaneous services	N	N ²	Y ²	Y	A	B	N

Air National Guard AICUZ Land Use Compatibility Table (continued)

SLUCM No.	Land Use	Accident Potential Zones			Noise Zones (decibels)			
	Name	Clear Zone	APZ I	APZ II	65 – 69	70 – 74	75 – 79	80 +
70	Cultural, entertainment and recreational							
71	Cultural activities (including churches)	N	N	N ²	A*	B*	N	N
71.2	Nature exhibits	N	Y ²	Y	Y*	N	N	N
72	Public assembly	N	N	N	Y	N	N	N
72.1	Auditoriums, concert halls	N	N	N	A	B	N	N
72.11	Outdoor music shells, amphitheaters	N	N	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	N	N	N	Y ¹⁷	Y ¹⁷	N	N
73	Amusements	N	N	Y ⁸	Y	Y	N	N
74	Recreational activities (including golf courses, riding stables, water recreation)	N	Y ^{8,9,10}	Y	Y*	A*	B*	N
75	Resorts and group camps	N	N	N	Y*	Y*	N	N
76	Parks	N	Y ⁸	Y ⁸	Y*	Y*	N	N
79	Other cultural, entertainment and recreation	N	Y ⁹	Y ⁹	Y*	Y*	N	N
80	Resource production and extraction							
81	Agriculture (except livestock)	Y ¹⁶	Y	Y	Y ¹⁸	Y ¹⁹	Y ²⁰	Y ^{20,21}
81.5 – 81.7	Livestock farming and animal breeding	N	Y ⁶	Y	Y ¹⁸	Y ¹⁹	Y ²⁰	Y ^{20,21}
82	Agricultural related activities	N	Y ⁵	Y	Y ¹⁸	Y ¹⁹	N	N
83	Forestry activities and related services	N ⁵	Y	Y	Y ¹⁸	Y ¹⁹	Y ²⁰	Y ^{20,21}
84	Fishing activities and related services	N ⁵	Y ⁵	Y	Y	Y	Y	Y
85	Mining activities and related services	N	Y ⁵	Y	Y	Y	Y	Y
89	Other resource production and extraction	N	Y ⁵	Y	Y	Y	Y	Y

Air National Guard AICUZ Land Use Compatibility Table (continued)

LEGEND

SLUCM	Standard Land Use Coding Manual, U.S. Department of Transportation.
Y (Yes)	Land use and related structures are compatible without restriction.
N (No)	Land use and related structures are not compatible and should be prohibited.
Y ^x	(Yes with Restrictions) Land use and related structures generally compatible; see notes indicated by the superscript.
N ^x	(No with Exceptions) See notes indicated by the superscript.
NLR	(Noise Level Reduction) Noise level reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation measures into the design and construction of the structures.
A, B, or C	Land use and related structures generally compatible; measures to achieve NLR for A (DNL/CNEL 65–69), B (DNL/CNEL 70–74), C (DNL/CNEL 75–79), need to be incorporated into the design and construction of structures. [DNL = Day-Night Average Sound Level; CNEL = Community Noise Equivalent Level]
A*, B*, and C*	Land use generally compatible with NLR. However, measures to achieve an overall noise level reduction do not necessarily solve noise difficulties and additional evaluation is warranted. See appropriate footnotes.
*	The designation of these uses as “compatible” in this zone reflects individual federal agencies’ and program considerations of general cost and feasibility factors, as well as past community experiences and program objectives. Localities, when evaluating the application of these guidelines to specific situations, may have different concerns or goals to consider.

Air National Guard AICUZ Land Use Compatibility Table (continued)

- Notes:
1. Suggested maximum density 1–2 dwelling units per acre, possibly increased under a Planned Unit Development where maximum lot coverage is less than 20 percent.
 2. Within each land use category, uses exist where further deliberating by local authorities may be needed due to the variation of densities in people and structures. Shopping malls and shopping centers are considered incompatible use in any accident potential zone (CZ, APZ I, APZ II).
 3. The placing of structures, buildings, or above-ground utility lines in the clear zone is subject to severe restrictions. In a majority of the clear zones, these items are prohibited. See AFI 32-7060 and AFJM 32-8008 for specific guidance.
 4. No passenger terminals and no major above-ground transmission lines in APZ I.
 5. Factors to be considered: labor intensity, structural coverage, explosive characteristics, and air pollution.
 6. Low-intensity office uses only. Meeting places, auditoriums, etc., not recommended.
 7. Excludes chapels.
 8. Facilities must be low intensity.
 9. Clubhouse not recommended.
 10. Areas for gathering of people are not recommended.
 - 11a. Although local conditions may require residential use, it is discouraged in DNL/CNEL 65–69 dB and strongly discouraged in DNL/CNEL 70–74 dB. The absence of viable alternative development options should be determined and an evaluation indicating that a demonstrated community need for residential use would not be met if development were prohibited in these zones should be conducted prior to approvals.
 - 11b. Where the community determines the residential uses must be allowed, measures to achieve outdoor to indoor NLR for DNL/CNEL 66–69 dB and DNL/CNEL 70–74 dB should be incorporated into building codes and considered in individual approvals.
 - 11c. NLR criteria will not eliminate outdoor noise problems. However, building location and site planning, design and use of berms and barriers can help mitigate outdoor exposure particularly from near ground level sources. Measures that reduce outdoor noise at a site should be used whenever practical in preference to measures which only protect interior spaces.
 12. Measures to achieve the same NLR as required for facilities in DNL/CNEL 65–69 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
 13. Measures to achieve the same NLR as required for facilities in DNL/CNEL 70–74 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
 14. Measures to achieve the same NLR as required for facilities in DNL/CNEL 75–79 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
 15. If noise sensitive, use indicated NLR; if not, use is compatible.
 16. No buildings.
 17. Land use is compatible provided special sound reinforcement systems are installed.
 18. Residential building requires the same NLR as required for facilities in DNL/CNEL 65–69 dB range.
 19. Residential building requires the same NLR as required for facilities in DNL/CNEL 70–74 dB range.
 20. Residential buildings are not permitted.
 21. Land use is not recommended. If the community decides the use is necessary, hearing protection devices should be worn by personnel.

